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# Worldwide Report

ENVIRONMENTAL QUALITY

No. 304

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BRIEFS

TIANJIN ENVIRONMENTAL PROTECTION LAWS--Tianjin, 30 Mar (XINHUA)--The Tianjin Municipal People's Government recently promulgated three local environmental protection laws. They are the "provisional measures of Tianjin municipality on collecting fee and imposing fine on factories discharging excessive polluted materials," "provisional regulation governing the protection of water sources of the Haihe River system in Tianjin municipality" and "provisional regulations on control of noise in Tianjin municipality." [OW031359 Beijing Xinhua Domestic Service in Chinese 0017 GMT 30 Mar 81]

WATER POLLUTION CONTROL--A meeting for the discussion and revision of the draft PRC law on water pollution prevention and control was recently held in Jiujiang municipality, Jiangxi, attended by responsible comrades of the State Council Environmental Protection Leading Group Office, members of the group for drafting the water pollution prevention and control law as well as experts and scholars in legal affairs and pollution control of the ministries concerned, environmental protection departments of some provinces and municipalities and colleges and universities, totaling more than 40 persons. The meeting will certainly facilitate environmental protection work in Jiangxi Province. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 18 Apr 81]

SHENYANG CITY CLEANLINESS DRIVE--Shenyang, 3 Apr (XINHUA)--Shenyang, one of China's biggest heavy industrial centers, will continue efforts to become a clean and beautiful city, according to a decision of the Standing Committee of the Municipal National People's Congress. This year, the city plans to plant 200,000 trees and 200,000 square meters of grass plots and afforest 130 hectares. An equal amount of beautification work was done last year. The city's flower nurseries have grown 500,000 flowering plants of nearly 150 varieties. Encouraged by the municipal authorities, 70 percent of Shenyang's families are raising flowers in and outside of their homes. Shenyang has 8,000 street cleaners. Mechanized sweepers are used on the main thoroughfares. April will be a hygiene month in Shenyang, people are being mobilized to rid the city of harmful pests, such as rats and bedbugs. [Text] [OW031359 Beijing XINHUA in English 0806 GMT 3 Apr 81]

CSO: 3000/4060



## DISASTROUS FLOODS BLAMED ON INDISCRIMINATE LOGGING

Kuala Lumpur BUSINESS TIMES in English 4 Mar 81 p 6

[Article by Luciano Rebamontan in Manila]

[Excerpts]

THE Philippines is paying a heavy price for the heavy damage done to its precious forest cover by indiscriminate slash-and-burn farming and logging.

The floods that submerged four North-eastern Mindanao provinces and two cities in Southern Philippines during the first week of February were a new reminder of what lies in store for the country unless logging and mindless cutting of trees by slash-and-burn farmers or kaingineros are not curtailed.

Rampaging floodwaters brought about by 81 days of torrential rains turned vast areas of Surigao del Sur, Surigao del Norte, Agusan del Sur and Agusan del Norte into veritable swamps of "indescribable suffering and devastation," as a government official described it.

Also submerged were the cities of Surigao and Butuan, two developing provincial trade hubs in Mindanao's heartland.

As of Feb. 11, the official death toll was more than 228,000 missing and presumed dead, and 8,300 stricken ill.

Damage to property had been initially estimated to be around 20 million pesos (US\$4 million). After a few days, the estimate was revised upwards to 200 million pesos (US\$27 million) and further to 300 million pesos (US\$40 million).

The area of devastation was officially placed at 200,000 hectares of some of Mindanao's most productive farmlands.

The flooding has raised renewed condemnation of logging in the calamity area, a subject that has often been raised in anger after similar disasters.

Mindanao's logging operations are controlled by a few individuals, many of them politicians or close friends of politicians and businessmen.

Residents of the two Agusan provinces complain that the systematic cutting down of trees in a 100,000-hectare area owned by a pulp and paper company have aggravated the flood situation in the region.

The pulp and paper company was allowed to develop the area to support its operations. Residents

said the firm cut down all trees in the project area to give way to the planting of pulp trees.

The result was a massive destruction of the forest cover and an alarming soil erosion of the mountains gone bald.

Rains washed down the eroded soil to the Agusan River, worsening already heavy siltation.

When the rains started pouring early this year, the pulp tree seedlings were washed away. And with the Agusan River already rendered shallow by heavy siltation, it could no longer contain the floodwaters from the mountains and the vast lowlands.

On the other hand, flooding in Luzon, the country's biggest island, has been traced not to logging but to slash-and-burn farming.

This view has raised widespread scepticism, but it was taken from the study undertaken by technical staff members of the Bureau of Forest Development and Soils, the National Power Corporation, Reforestation Administration, Commission on National Irrigation and the National

Irrigation Administration.

The study said that from 1964 to 1980, forest lands were extensively reduced by vegetable farming within the Agno River basin in Benguet province in the northern part of Luzon and kaingin farming in the Central Luzon province of Pampanga.

Kaingin farmers cut down all other plants, clean the land before planting vegetables and crop trees. This practice leaves the soil dry and when it rains the top soil is carried down the mountain ranges to the lowlands and usually deposited in river beds, a vital natural outlet for floodwaters.

The study said that 34 per cent of Pampanga's 214,800 hectares and 43 per cent of the Agno River basin's 156,385 hectares used to be forest lands. But what used to be thick forests are now cultivated vegetable patches and ricefields.

In the Agno River basin alone, which covers 223,391 hectares, nine logging concessionaires have been allowed to operate in the area. — Depnews

## TRINIDAD & TOBAGO

### BRIEFS

FLOOD DAMAGE IN TRINIDAD--Port-of-Spain, Trinidad, 23 Apr (CANA)--Trinidad and Tobago was today assessing its losses, as heavy rains continued across the islands. So far 280 millimeters of rains have fallen this month (April), the highest on record, said the meteorological office at Piarco Airport. So far, according to the Minister of Agriculture Lands and Fishery, 47 million (1 TT dollar; 41 cents U.S.), dollars of damage has been recorded, but the figure is expected to rise when losses from outlying districts are added. [Excerpt] [FL231912 Bridgetown CANA in English 1838 GMT 23 Apr 81 FL]

CSO: 5000/2115



## STUDIES FIND WIDESPREAD POLLUTION OF DRINKING WATER

Amman AL-RA'Y in Arabic 10 Mar 81 p 3

[Article by 'Abd al-Rahman 'Abbushi: "Measures To Stop the Pollution of Drinking Water in Various Parts of Jordan"]

[Text] The Ministry of Health is undertaking an examination of the drinking water in the towns and villages of the kingdom in order to draw up and submit for review resolutions which will enjoin the responsible agencies and municipalities to take measures guaranteed to prevent water pollution.

Likewise, the Ministry of Health is following up on all the measures necessary to protect drinking water and is laying down the necessary instructions and directives related to the sources of drinking water, whether public or private.

Health supervisors are undertaking to watch drinking water in order to ascertain the extent of its suitability and to observe the purification systems used at purification stations and measure the excess of chlorine in the network.

All drinking water sources for the capital, which were inspected in the laboratories of the ministry in the past year, numbered around 190 and the rate of pollution was 8.5 percent. An examination of the water sources in the systems of the municipalities and villages was performed on 3,547 springs, of which 464 were unpure.

Moreover, in the reports drawn up by the Ministry of Health regarding the pollution of drinking water last November, it was stated that the rate of pollution in Irbid had reached 21.7 percent; in Zirqah, 20 percent; Wadi al-Sayr, 21.7 percent; al-Rasfiya, 18.1 percent; al-Tafila, 28.5 percent; Ma'an, 50 percent; al-Ramtha, 100 percent; Jarash, 100 percent; and al-Mafraq, 18.1 percent.

The rates of pollution last December were: Zirqah, 16.8 percent; al-Rasifa, almost 35.8 percent; al-Salt, 28.5 percent; 'Ajlun, around 41 percent; and al-Mafraq, 28 percent.

The rate of pollution in the springs tapped by the municipal networks during the past year was [in percent]: Irbid, 9.3; Ziraq', 19.2; Suwaylah, 2.8; Wadi al-Sayr, 4.7; al-Tafilah, 13; al-Rasifa, 20.9; Madaba, 10.7; al-Shawna al-Shamaliyah, 6.6; Suf, 6.9; al-Karak, 14.1; 'Ajlun, 12.1; Jarash, 9.3; al-Mafraq, 9.1; al-Mazar al-Shamali, 7.9; Sahab, 4.7; al-Ramtha, 35.4; al-Salt, 11.4; Ma'an, 'Ayn Jinna, 4.5; al-Fahis, Dayr 'Ala, 18.1; 'Anjara, 2; Kafr Najah, 11.7; Basira, 5.2; al-Husn, 11.1; al-Jabiha, 12.5; al-Sakhsah, no pollution; Na'ur, 16.6; al-Taybah, Irbid, 40; Dhayban, no pollution; al-Tara, 66.6; al-Wahadat, 11.7; Jarash Camp, 8.4; Suf Camp, 4.5 and Irbid Camp, 4.7.

The rate of pollution for companies and institutions was: The petroleum refinery, around 18 percent; Paper and Carton, around 83 percent; the Jordan-Syria Transport Company, 25 percent; the Amiriyah Spinning and Weaving Mill, 50 percent; and the Arab Potash Company, around 66 percent.

Sources in the Ministry of Health have noted that the reasons for most of the pollution revert to neglect regarding constant treatment and the use of a sufficient proportion of chlorine, as well as the worn out state of the water distribution network.

9614

CSO: 5000/4216

PRIME MINISTER ANNOUNCES DROUGHT RELIEF MEASURES

Casablanca AL BAYANE in French 1 Apr 81 pp 1, 3

[Article]

[Text] At a press conference held Tuesday in Marrakech, the prime minister and minister of justice announced a series of drought relief measures. Here are significant extracts from the that press conference:

"I would like to begin by telling you that as soon as the first signs of drought appeared, and as soon as it became evident that our agricultural production this year would be insufficient, the government set about to take the necessary measures to alleviate the effects of such a situation.

"These measures and actions have two main objectives:

"To guarantee a normal and adequate provision and distribution of basic agricultural commodities to the country and standard and fair prices;

"To draw up a policy of assistance and support to the agricultural sector, including a plan to safeguard livestock, a jobs policy to benefit the rural populace, and a series of finance measures looking forward to the next agricultural season.

"With respect to the first objective, that aims at assuring the populace of food and which has been the top priority and prime concern of the government, I can tell you right now that the program set forth responds completely to the needs of the people.

"In the point of fact, and particularly with respect to the four cereal grains: hard wheat, tender wheat, corn, and barley, it has been decided to import 35 million hundredweights, which is twice the quantity imported last year. These imports will assure adequate food until the harvest from the next agricultural season, that is until the summer of 1982. Importing such large quantities of grain requires, naturally, taking some appropriate measures to make sure these commodities are received, stored, and distributed in good condition.

"Also, it has been decided to give priority, in the ports, to the unloading of cereal grains and to mobilize all transport resources available to the public authorities in order to get the imported grain on the road out to the different provinces.

"Also, the state has made the decision to intervene directly and for the first time in the distribution system by developing a national provisioning program both at the level of the wholesalers and of the souks."

"I am persuaded that thanks to this series of measures, the road will be barred to dishonest speculators who would have certainly tried to profit from this predicament indulged in antisocial and antinational activities."

"The deficient rainfall will be reflected in a diminished supply of water in the country, and this is why the necessary measures have been taken in the affected regions to assure the covering of essential needs both in terms of consumption of potable water and in terms of industrial water, irrigation, and other uses of this vital substance."

"If the drought is a scourge whose effects are felt on the entire population, in the rural sector it is a tragedy, since it affects the growers and farm workers in their livelihood."

"Taking this into account, the government has drawn up an emergency program and a policy of support to the rural sector. This policy includes the safeguarding of livestock, the creation of jobs in rural areas and a set of financial measures for the benefit of farmers."

"No one ignores the important place that livestock raising occupies in our country's economy. The livestock remain extremely sensitive to climatic vagaries and assuring their survival is a matter of highest priority. With respect to the first operation, which is to fill the deficit in livestock feed, the government has decided to subsidize the distribution of barley at the 50 percent level and to freeze the export of agro-industrial products used as livestock feed. At the same time, it will import sizeable quantities of livestock feed which will be exempt from statutory imposts. These products will be distributed among the different provinces, and in particular those most affected by the drought. This operation will be supplemented by a sustained effort aimed at improving the health of the livestock and an intensification of the struggle against livestock diseases."

"Also, the government has not failed to take into consideration the fact that one of the most tragic effects of the drought will be a substantial decline in agricultural income and the disappearance of many job opportunities for rural manpower. In order to remedy this situation a vast rural jobs policy has been drawn up and will be implemented in close collaboration with the provincial services, the local communities, and the national promotion [office]. The comprehensive program that has thus been decided involves heavy utilization of manpower to provide alternate sources of income for rural workers."

"These programs will also involve the building of infrastructure and fitting out of construction projects for various administrative units, as well as various agricultural activities such as forestry work, clearing stones from land, small and medium sized water projects. To this end, special administrative and financial procedures characterized by their flexibility, speed, and effectiveness have been drawn up."

"Finally, and in order to permit farmers to begin the next agricultural season under favorable conditions, certain measures of a financial nature will be taken for

their benefit, particularly the offering of credit on the present agricultural season in proportion to the damage sustained and without the carry-forward of credit affecting the granting of new loans for the upcoming season. The solutions chosen will naturally require an enormous financial effort on the part of the state...."

9516

CB01 3000/4996

URGENCY OF ANTI-WATER POLLUTION MEASURES STRESSED

Damascus AL-BATH in Arabic 27 Feb 81 p 4

[Article by Ghassan al-Balu'i "Implementation of Anti-Pollution Projects is a Dire Necessity"]

[Text] Since 1969, the responsible agencies have been studying the problem of pollution in order to devise basic solutions to the problem of water pollution. This pollution would not exist but for the mistakes and crimes committed over many years, as a result of which we now suffer from these difficulties.

In the 'Asi [Orontes] River basin, a problem has developed and river pollution has intensified due to the establishment of huge factories and the draining of their polluted waters into the river without any treatment to speak of. Another reason is the increase in population along the course of the river and the dumping of sewage directly into the river.

As for the Barada, suffice it to note that there are about 120 channel mouths opening on the river, which in turn irrigates the lands of al-Ghuta planted with vegetables which then carry bacteria and disease to the consumers. Suffice it to say also that the channels are the principal cause of ailments of the digestive system and that 36 percent of the medicine consumed in the area is related to such ailments.

We must confront these problems until matters return to normal and the environment thrives. This would be through the enactment of strict laws and regulations to control pollution and the formation of the necessary technical teams through the setting up of a department specializing in health engineering in the civil engineering faculties of the country's universities. If this competence becomes widespread in our projects, then no workplace or factory would function without the resultant problems of pollution being solved during its construction, and no network of channels would be excavated without thought as to how to use them without causing pollution.

9614

C80: 5000/4716



ENCROACHING SEA WATER THREATENS BEIRA COASTLINE

Beira NOTICIAS ' DA BEIRA in Portuguese 5 Mar 81 pp 2, 5

[Article by Narciso Castanheira: "Protection of Beaches Serious Problem"]

[Excerpts] Encroaching sea water in certain areas along the coast of the city of Beira (and hence its beaches) has caused a series of damages, constituting a threat, more precisely a threat to habitation.

This sensitive matter, which has been dragging on since colonial times, has been one of the major concerns of the local officials as well as the central organs of government.

The city's inhabitants and visitors alike always bring up the problem of the encroachment of the sea on the beaches, more specifically, between Ponta Gaa and Macuti.

While they discuss the problem and employees of the Executive Council of the City of Beira struggle with what few resources are available to them to protect the beaches, the ocean is furiously demolishing houses, trees, walls and so on.

In the zone of Macuto, in the old "Estoril" tourist camp, there is a shortage of multifamily houses (which are generally leased). The impudent sea waves present a grim spectacle, especially in the last few days when heavy rains have caused floods and a rise in the rivers' currents.

As you look around, some stone rubble and other wreckage are evidence that, here and there, there was once a house, there was a resort hotel and even a large pavillion where dances were once held and refreshments were served.

Near the former "Estoril" tourist camp there is an important port authority lighthouse. The director of urban services of the Executive Council of the City of Beira told us it is in danger of being destroyed by the waves.

The swimming pool of the Clube Nautico is also threatened with destruction.

We have spoken previously of the encroachment of coastal waters on the city of Beira, since it has been going on for many years.

The problem merits scientific study, requiring the assistance of oceanographers, that is, of scientists who study the behavior of the sea.

To this end, an oceanographer from the National Directorate of Waters was in this city last month to survey the situation. This is the first study of its kind to be conducted in our country by the directorate, we were told by the director of urban services of the City Executive Council.

As for what is being done to protect the beaches in the meantime, the director told us that his service has a brigade permanently engaged in rebuilding the "spurs," a type of wall laid out in several directions, in accordance with the way the currents behave from zone to zone.

The nature of the work is quite slow, however, and it is not effective enough to afford the necessary protection.

6362

CSO: 5000/4989

## WATER SHORTAGE IN WINDHOEK SAID SERIOUS

### Water Source Situation

Windhoek WINDHOEK OBSERVER in English 4 Apr 81 p 28

[Text]

Windhoek's major water source, the Von Bach Dam near Okahandja, is not a promising sight. With 16,6 million cubic metres (31,2 percent), water must be conserved for another dry season could spell disaster to the Capital.

Even worse is the fact that Von Bach's sister dam, Swakoppoort, which is 70 km down the Swakopriver, is now waiting for four consecutive summers to receive water.

She is a bigger dam than Von Bach and a pipe line has already been built between the two of them. Swakoppoort currently has 2,8

million cubic metres (4 percent).

The inflow into Von Bach in the past season was marginal.

Water restrictions for Windhoek became applicable on Wednesday of this week. Every domestic consumer is restricted to 30 kilo litres of water per month, at a price of 34 cents per kilo litre. Consumption in excess of that is charged at a rate of 60 cent per kilo litre - making it one of the highest water prices in Southern Africa. It is possibly only Luderitz which still beats Windhoek in the price of water.

### Dam Readings Called Depressing

Windhoek WINDHOEK OBSERVER in English 4 Apr 81 p 28

[Text]

WINDHOEK: The latest readings of South West Africa's major dams make depressing reading. All hope that one or more of them could still get some water is virtually non-existent.

The Department of Hydrology released the following readings:

- \* Hardap at Mariental 55,8 percent (167 million cubic metres);
- \* Naute Dam in Keetmanshoop district 77,7 percent (54 million cubic metres);
- \* Driefhuk in the Karasburg district, empty;
- \* von Bach at Okahandja which is Windhoek's major water resource 31,2 percent (16,6 million cubic metres);
- \* Swakoppoort, the sister dam of von Bach which is now waiting for the fourth season to receive water, 4 percent (2,8 million cubic metres);
- \* Friedmann, west of Windhoek 31,5 percent (2,2 million

cubic metres);

- \* Goringob at Windhoek 25,1 percent (1,3 million cubic metres).

Avia Dam, east of Windhoek is empty. There is though, a large pool of water in Avia, and the dam, a bird sanctuary by decree of the City Council of Windhoek, is again abounding with wild geese and duck, after all of them had left towards the end of December. Twice, the Klein Windhoek River came down, but not sufficient for pumping purposes. The area though, is so lush and beautiful that it has become a major point of attraction over weekends.

The Dan Viljoen Dam at Gobabis is empty and likewise is Gobabis' pump storage dam which receives its water from Dan Viljoen.

Okahandja in the Oранже speaking region, 1,4 percent (0,6 million cubic metres).

Thus, the outlook is bleak.

DESCRIPTION OF DRY, LIFELESS AREA GIVEN

Windhoek WINDHOEK OBSERVER in English 4 Apr 81 p 26

[Article: "Unstoppable Death Encroaches"]

[Text]

WINDHOEK: A vast dust layer over most of the Etosha?

Yes, it sprang up like fog at the coast and it reached up for several thousand feet. Visibility was poor. The date April 1, 1981.

In the long flights to the north one has ample time to observe the world below you. If you have been part of the country since birth, you realise that the current drought must be worst in human memory.

Directly after taking off from Windhoek, there is nothing to be seen other than some water in a river which is a tributary of the Swakop.

The area around the Omatako Hills are scorched.

How a mouse can possibly exist in this region by the time the winter has arrived, or even worse, in the second half of the year, is even beyond the scope of the greatest optimist.

Twice we encountered patches showing a

glimmer of green which stands out in a pronounced way. A few were fortunate in the region where the great Kalbfeld road to Otjivero is being traversed.

Despite earlier statements, the Etosha Game Reserve is largely dry. In fact, its northern perimeter can be described as lifeless. On account of the prescribed safety measures to be followed for one enters the war zone, altitude is being lost while approaching the far end of the Park.

There is no game. We twice encountered life - ostriches.

The Ovambo-speaking region faces a similar dilemma. What are traditionally water-bound areas, are dry. It was the spectacle of the huge, almost fog-like dust layers over the Etosha on the return flight which reminded one of the disaster at our doorstep.

"Picture of part of the Etosha which is usually under water in a normal summer. It is parched, lifeless.

## CHILANGA CEMENT TAKES MEASURES TO END POLLUTION

Lusaka TIMES OF ZAMBIA in English 11 Apr 81 p 5

[Text]

**CHILANGA Cement has taken measures to end pollution at its plants in Chilanga and Ndola.**

The measures include overhauling of kilns, speeding up repairs and installing precipitators to control the dust from the kilns.

An Indeco spokesman said in Lusaka yesterday that the project would be financed by the European Investment Bank, Danish International Development Agency and syndicated local loans.

He could not say how much it would cost but noted that the funds had been released. Recent price increases for cement had improved the liquidity position of the company.

Pollution by the company disrupted experiments at Mount Makulu Research Station while residents of Ndola's Itawa suburb complained of cement dust from the town's factory.

Ndola council gave Chilanga until last July to control dust and chemical fumes from its kilns or have it closed by a court order under the Public Health Act.

The spokesman noted that liquidity problems had made it difficult to proceed with installation and repairs of dust precipitators.

Chilanga Cement wanted to reduce dust emission to levels which would not inconvenience the public and the reduction in the outflow would improve production by about five per cent.

He urged the public to appreciate that some factors were outside the company's control.

The economic recession of the late 70s had been so serious that financial resources for on-going capital expenditure and improvements had been limited.

But the company pleaded with the council to give it more time because it had no money and said closure of the plant would result in redundancies and shortages of cement.

But an Indeco spokesman said yesterday installation of dust precipitators on one kiln at Chilanga works would be completed next year.

"Spares are on site and the precipitator will be installed soon after overhauling the kiln later this year," he said.

Spares for the dust precipitators at Ndola works were on order from Denmark and would be delivered later this year.

## UNIFIED RSFSR ENVIRONMENTAL PROTECTION PLAN NEEDED

Moscow SOVETSKAYA ROSSIYA in Russian 8 Feb 81 p 2

[Article by Yu. Strakach, doctor of historical sciences: "To Love Means to Guard"]

[Text] Russia's expanses are immense. Dawn continues for 10 hours in the republic. The RSFSR is not only the largest in territory, the most powerful in industrial potential and natural resources, but is also surprisingly beautiful. Our fields, forests, rivers and the sky above us are a wealth that is priceless. One can admire nature's beauty forever. How many joyful minutes, good feelings and thoughts we get from a happy encounter with it! But do we always remember that in our time of unprecedented scales of technical progress, nature, as never before, requires a sensitive and prudent attitude towards it.

To love it means to guard, preserve and multiply it so that nature, our great home, remains just as wonderful for our progeny. Love must be active, based on a knowledge of the laws of nature.

We now already know many secrets of nature. The chain of relationships "production-environment-man" is being studied more attentively and comprehensively. Perfection of this knowledge and its use in practical activity and organizing control is the path that was clearly designated in the decisions of the 25th CPSU Congress.

We are following this path. The USSR Constitution included environmental protection among our chief social principles.

Questions of environmental protection again sounded in the draft of the CPSU Central Committee "Basic Directions for the Economic and Social Development of the USSR for 1981-1985 and for the Period to 1990." One of the principles in this document is the acknowledgement of the close interrelationship of economic solutions and socioeconomic consequences. We will be honest: harmony is not always reached in man's interrelationships with nature. In our economic activity we are still not making sufficient consideration for the laws of nature. We often forget that people pay sooner or later for every damage done to nature. At all stages of planning, construction and operation of production facilities, it is necessary to pay more attention to environmental protection technology and its reliability. In other words, it is necessary to reduce to the maximum the unproductive losses and to be concerned about prevention and the necessary purification-restoration work. At the same time, the industrial landscapes that are so familiar to each of us with the invariable haze of smokestacks indicate not only damage to nature, but to human health as well.



There are examples of a different type. At the Novosibirsk chemical plant additional products totalling millions of rubles are now being produced from exhaust gases that previously poisoned the air. The resources spent by the enterprise to install modern gas-traps have been compensated for long ago. The plant territory is literally drowning in flowers. This type of solution to the environmental protection problem should be stimulated with money. The time has apparently come to think seriously about establishing planned payment for the enterprises for the use of any natural resources. The payment should be higher, the more important the area of nature is.

It is common knowledge, for example, that the floodplain, tundra and other forests of increased ecological value are important. However there are managers who disregard the threat of losing the natural fund that is most valuable to us. They are ready to pay a fine (most often from the state pocket), justifying the damage by considerations of production necessity. This approach is impermissible. The strictest measures should be taken against this type of "justifier" of production efficiency. It cannot be forgotten that environmental protection is a matter in which any defect takes years and decades to correct, and perhaps is irreparable.

All of nature should be preserved, but especially the natural objects of increased value. The creation of sanctuaries is the most popular method in the republic for specific reservation of a territory. They might be special sanctuaries, that is, designed for intensified protection of individual natural resources: spawning reservoirs, sites of mass nesting of aquatic wildlife, etc. The sanctuary idea also covers landscaped zones in cities and single objects that are of great cognitive and aesthetic value, monuments of nature.

Certain natural-territorial complexes play a decisive role in regional natural bonds. As "standards of nature," they require not sanctuaries but prohibited use of nature, that is exclusion of any economic use, guarantee of intensified protection and organization of studies to formulate reliable environmental protection recommendations. The rising pull of people to vacation in nature determines the need for a new form of specific reservation of territory. To what measure does the extant network of sanctuaries and preserves meet the requirements of today? Natural objects that need special preservation occupy about 8% of the entire USSR territory. It should be said that this number corresponds to the world standards. This network is not at all distributed in the best manner. Judge for yourself. In the extreme north, whose regions comprise almost two-thirds of the RSFSR territory, only 2.5% of the area is natural objects needing special protection. Nature there is especially vulnerable. Even a slight, at first glance, damage to the plant cover results in thawing of the ground and rapid development of soil erosion. This impairs further economic use of the territory. Of course, in the not too distant past, when development of the north had just begun, we could have coped with this situation. But it would be a mistake to preserve it in the future. The lack of a unified plan of environmental protection is especially intolerable in the extreme north. It appears that the formulation and introduction of territorial complex plans of environmental protection will help to overcome the departmental approach that unfavorably influences the process of economic development of these regions. In the new, 11th Five-Year Plan, the plans now being formulated need to be implemented.

The time has apparently come for everyone to understand that by giving efforts, knowledge and time to environmental protection, man will take more from nature. Environmental protection not only has an economic, but also a moral side. A prudent and efficient attitude towards it is an important part of the formation of a spiritually rich individual. Love for country and concern for its blossoming also suggests love for nature. But a definite organization of our relationships with nature is needed. We have a fairly branched network of environmental protection services. There is no doubt that it should be developed even further. It seems to me that we should think about setting up interdepartmental state agencies that could provide a national and regional strategy for developing economic and social attitudes in close ties with the nature systems. I would like to mention that in the Ukraine, in Belorussia, Moldavia, Lithuania, Georgia and Azerbaijan, state committees on environmental protection have already been set up, in addition to other environmental protection services. I am confident that organization of such a committee in the Russian Federation with the most complicated nature-economic links is simply needed. Many all-union departments are working in the republic. Their participation in the territorial system of environmental protection is practically not coordinated. It is therefore extremely important to have efficient supervision in the center and locally on all questions of organizing and controlling the effectiveness of environmental protection measures.

Nature is accessible to everyone. We all live in its hospitable and wide open house. Nature is generous. Without demanding anything in exchange, it gives man its wealth, its beauty, and makes it better and cleaner. Nature is patient for so long and then no longer. Without complaining, it absorbs the toxic smoke of the chemical plants, the wastes poisoning the rivers, and endures barbaric cutting of age-old trees, and many other of our wasteful actions. Even the most well-thought out and advanced environmental protection plans will not make significant shifts, if each of us does not think about our personal participation in this truly humane matter. In the final analysis, it depends on our concern and our initiative whether we will be able to preserve the earth's beauty and multiply its resources. Our we really guests in our own home? Our home is our own and we have to guard it.

9035

CSO: 5000/20

# NAZARBEEK BEGINS POST-EARTHQUAKE RECOVERY

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 13 Feb 81 p 1

[Article by Ye. Taubenshlag, TASS correspondent: "The Bus Is Waiting for You, Children!"]

[Text] The school was in the earthquake epicenter, but this had no effect on the fulfillment of the educational program.

The settlement of Nazarbek, adjacent to the western margins of Tashkent shuddered at noon. The children of the settlement did not feel the next underground jolt. They had already gotten into the buses. The GAI [state automobile inspection] officer waved a flag and the column started on the road, to a new school located in the middle of Tashkent. It is dangerous for the children to study in the old Nazarbek school.

The school was in the exact epicenter of the Nazarbek earthquake on 11 December 1980. Although the first jolt did not inflict noticeable damage, the children have not once crossed the threshold. The classrooms and offices are occupied by seismologists. An automatic station has been set up here. It radios the "cardiogram" of the earth's depths to the central seismic station.

All the reports from the capital of Uzbekistan regarding the strongest jolts of the Nazarbek underground storm invariably ended on a positive note: there was no destruction in the city. This was true in Tashkent. Novyy Tashkent endured. The situation was more complicated in Nazarbek. The damage inflicted by the first jolt was not successfully completely measured at first. Pipes fell somewhere, clay walls crumpled and cracks appeared. But something else occurred. The cracks did not show from the outside, but the brickwork under the plaster was destroyed and the bonds between the bricks were weakened. Only the second, third and tenth jolts revealed the full measure of the misfortune. Day after day the element stubbornly swayed the buildings. In 2 months, the "Tashkent" station recorded 283 jolts of varying strength. Two of them occurred on the morning of 11 February.

But long before the underground jolts, following one after the other, damaged the settlement, safety measures had been taken here. The chairman of the sel'sovet [rural council] Rakhima Dzhabbarova relates that everyone who needed help was given a tent and wagon, and they still act on every case. If the house was damaged only slightly, it was reinforced with steel racks by conclusion of the builders. Resources were not spared for this. The safety and health of the people were most important.

Projects were discussed here from the very first jolts of the underground element, because not one of the 1820 families in Nazarbek wanted to leave the settlement. They were given a choice: move to another settlement farther from the epicenter, or to Tashkent whose nine-story buildings were clearly visible from here. They preferred to stay on this land, next to their fields and gardens.

The contours of a transformed Nazarbek are already on the sheets of Whatman drawing paper. It has wide streets with two-story cottages, with new schools, hospitals and stores. All the buildings are designed for a 9-point earthquake, and even with considerable margin.

The forces have already been defined that are needed to build up and transform Nazarbek and other settlements. Two special trusts, dozens of mobile mechanized columns and new enterprises of the construction industry represent the arsenal given to the people of Nazarbek.

For now the houses have been reinforced, the hospital has been moved to the building of the sovkhos office and the store to a trailer. In the cracked building of the sel'sovet there are hanging lists of families who need state assistance. A quarter of a million rubles have already been distributed. This is the third time the inspector of the Gosstrakh [Main Administration of State Insurance] is visiting the settlement to determine the sums of the next payments.

In the office of biology where the seismologists have set up observations of the earthquake focus, I found a sheet with an illustration of green Christmas trees with the inscription "Happy New Year!" The children were preparing for the holiday when the normal course of life was disrupted by the underground storm.

They were not touched by the misfortune in the new year. A Christmas tree was put up for them on that day. The smallest pupils, from the first through third grades, were moved to the neighboring region, Ordzhonikidze. They were given an entire vacation home here. It became a boarding school. The Uzbek soviet of trade unions completely absorbed the cost. This is home for 440 small children with their teachers and educators.

Those who are older come to the old school every day. This is an important feature. They travel on the customary route and exactly at 12:30 the buses allocated by the enterprises of the neighboring cities and settlements start on the road to the new school.

Thirty-four classes are 1030 people! The director of the school, M. Alimova who teaches the young children Russian, began the first lesson in the new place thus:

"In our country all children study. The whole country is concerned about this."

Yet another lesson on friendship of peoples has begun.

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CSO: 5000/20



**BELORUSSIAN INNOVATION REDUCES POWER PLANT POLLUTION**

Minsk SOVETSKAYA BELORUSSIYA in Russian 10 Mar 81 p 2

[Article by BELTA: "Clean Breathing for the Plant"]

[Text] A new method of solid fuel combustion suggested by the republic scientists guarantees clean air new the power plants. As shown by the tests of the innovation that were conducted in the Institute of Heat and Mass Exchange of the Belorussian SSR Academy of Sciences, the discharge of harmful oxides of nitrogen and sulfur into the atmosphere is reduced several times.

The scientists have solved the problem by suggesting a two-stage technology using the so-called "fluidized bed." This method reduces the supply of air into the furnace. The nitric oxides that previously flew uninhibitedly into the atmosphere are now converted into harmless nitrogen. Using common limestone or dolomite, the majority of sulfur in the fuel is trapped.

The appearance of this development is very timely, since low-grade coals of the Ekibastuz, Kansk-Achinsk, Kuznetsk and other fields will be widely used in the near future to obtain power. If measures are not taken, then the fuel can inflict serious damage on nature. The 26th CPSU Congress therefore noted the great importance of developing new technological processes in power engineering in which emissions of harmful substances into the environment would be sharply curtailed. The Main Directions of Economic and Social Development of the USSR for 1981-1985 and for the Period to 1990 stresses: "Strengthen protection of nature, the land and its resources, the atmospheric air, reservoirs, the animal and plant world."

The innovation suggested by the Belorussian scientists is also good because it can be used not only in planning new GRES's, but also in updating the extant. As the calculations show, the expenditures for re-equipping are comparatively low. The preliminary reconstruction plan has already been formulated for the Zhodino TETs.

9035

CSO: 5000/20

NORWAY, EC SIGN ENVIRONMENT PACT FOR SHARING OF DATA

Oslo ARBEIDERBLADET in Norwegian 12 Feb 81 p 19

[Article by Max Malzer]

[Text] Brussels: Norway has entered into an environmental pact with the EC, which is to take the form of a written exchange of information. The pact was signed in Brussels by the head of the EC Commission on Environmental Issues, Karl-Heinz Narjes of Germany and Norway's ambassador to the EC, Sverre Gjellum. The agreement is to lay the groundwork for closer cooperation, particularly for a regular exchange of ideas and results from current research programs.

Among the current, concrete topics that have led to the pact are: the acid content in precipitation, sulfur dioxide in the atmosphere, the erosion of the ozone layer around the earth by fluorocarbons (last year in this area the Community initiated regulations to limit the use of these substances and Norway is in the process of putting these regulations into effect), and finally oil pollution of the seas, where Norway already participates in the so-called Bonn Conventions, which include all countries on the North Sea.

Norway is the seventh country with which the EC has signed agreements in the area of environmental protection. The EC already has agreements with the United States, Sweden, Japan, Canada, Austria, and Switzerland. The agreements are the result of the decision to work together with the EFTA countries over and above the free-trade arrangement. The first meeting at which the formal agreement will take on concrete form will be held in Oslo, but the date has not yet been determined.

9336

CSO: 5000/2097



**NORDIC COUNTRIES COOPERATE TO BATTLE OIL SPILLS**

**Oslo AFTENPOSTEN in Norwegian 3 Mar 81 p 4**

**[Article by Elvind G. Karlsen]**

[Text] Later this month Nordic environmental authorities will discuss joint measures for preventing oil spills and oil pollution. Aerial surveillance or better information on shipping traffic may be discussed and cooperation on such measures is possible with regard to Skagerrak, Kattegat, and the Baltic Sea, Environment Minister Rolf Hansen stated at the Nordic Council in Copenhagen this evening.

"The accident in Skagerrak last winter showed what catastrophic results an oil spill can have on the sea bird population," said Minister Hansen, who also, on the basis of analytical data, strongly repudiated indications that this or any oil pollution was due to releases from the continental shelf.

The sea bird catastrophe was a message for Denmark, Sweden, and Norway that they must find much more effective ways of preventing such occurrences in Skagerrak and Kattegat.

"This is clearly a case in which we can speak of common sea and common responsibility," Rolf Hansen said. "When it comes to shipping traffic, this occurrence has demonstrated that additional measures are still needed. As one joint concrete measure in this area, Minister Hansen pointed to surveillance and monitoring that could lead to discovery and countermeasures against oil pollution before it does any damage. According to Minister Hansen, surveillance and monitoring will make it possible for us to "catch" more ships that are breaking the international regulations.

One procedure, he said, could be to carry out aerial surveillance of ocean areas in which it is of common interest to us to discover oil spills. Another possible means of cooperation is to establish a system for the exchange of information concerning shipping traffic, in such a way that we would know at all times which ships were in our waters and what cargo they were carrying.

To examine in more detail what measures it could be practical to carry out in this area, a meeting of the Nordic environmental authorities has been set for later this month, Minister Rolf Hansen said.

SEVERAL HUNDRED TONS OF POISONOUS WASTE FOUND IN COPENHAGEN

Stockholm DAGENS NYHETER in Swedish 7 Mar 81 p 10

[Text] Several hundred tons of poisonous organic solvents have been found under a heavily used city square. Toftegardeplads, in the western section of Copenhagen. The solvents came from a closed paint and varnish factory, which was located on the square up until 10 years ago. They were discovered during excavation for a new bus terminal.

Among the solvents are toluene and various benzene additives. The poisons have penetrated into a 2 or 3 meter thick layer of sand of about 3,000 square meters. Copenhagen's communal environmental authorities estimate that there is between 200 and 500 tons of poisons, but it is not possible to remove them.

The Environmental Department believes it will be possible to pump up some of the water from the ground and separate some of the solvents, but there is no immediate risk that the groundwater will be contaminated.

Copenhagen's environmental commissioner Ivan Hansen said that it will hardly be possible to take legal action in connection with the pollution.

"I doubt that the factory broke any laws at that time," the commissioner said.

Dirt Dumped At Oresund

A misunderstanding between two divisions at Copenhagen's City Hall seems to have caused part of the poisonous dirt layer from Toftegardeplads to end up at a land-fill near Oresund.

At that site, 180 tons of dirt have been dumped, along with 7 tons of poisonous solvents. The municipality is now trying to settle the question of responsibility and have the dirt removed from Oresund, where it could create a hazard.

9336

CSO: 5000/2103

GOVERNMENT ORDERS HALT TO SHELLFISHING AFTER MERCURY FIND

Stockholm DAGENS NYHETER in Swedish 13 Mar 81 p 7

[Text] Danish fish caught in Oresund and Koge Bay contain high concentrations of poison.

It is primarily effluents from the Dansk Sojakagefabrik in Copenhagen that have caused Swedish and Danish authorities to warn consumers against eating fish caught in these waters.

The effluents from the Sojakagefabrik facility have polluted the sea up to 35 kilometers from Copenhagen harbor and have now jeopardized a considerable portion of Danish fish exports. In money terms, this means that Denmark could lose hundreds of millions of kroner.

Earlier this week, parliament unanimously allocated 25 million for cleaning up stores of poison at Harboore Tange on Jutland on the west coast. It may cost twice that amount, since no one knows what is lying under ground. For several decades Cheminova A/S, which produces pesticides, has deposited dangerous poisons at various sites near Limfjorden and the west coast. The sale of fish and shellfish from Limfjorden has now been prohibited.

Denmark has now had its version of BT Kemi. What has caused the authorities to react so strongly is the fact that the rumor of poisoned Danish fish has now reached Europe and the United States. Thus, one of Denmark's foremost industries and export products is in danger. For just 2,000 or so families on Thyboron off the west coast, around 180 million kroner worth of fish is caught annually.

No one knows how extensive the pollution from Keminova is. There is some talk that barrels of poison have been dumped at sea, in addition to the waste water emissions that are already known and pollution of the groundwater from decomposed concrete containers of poison. Company executives deny any responsibility for the poison dumping, which occurred 20 years ago.

Swedish authorities also recommend reduced consumption of fish caught in Oresund. Such fish should be eaten no more than once a week if one is to be on the safe side, according to food officials. The pollution on the Swedish side, however, is not comparable to the effluents from the Sojakagefabrik facility in Copenhagen. One hundred twenty five milligrams of mercury per kilogram of fish has been measured in the harbor. The maximum permissible concentration in Sweden is 1 milligram.

DENMARK

# MERCURY WASTE FROM FACTORY CONTAMINATES ORESUND FISH

Stockholm DAGENS NYHETER in Swedish 22 Mar 81 p 37

[Text] Mercury leakage from a 20 year old seed disinfectant warehouse has forced Danish authorities to stop sales of fish and shellfish from the area around Harboore Tange at the mouth of Limfjorden on western Jutland.

"There will be no import stop on Limfjorden clams sold in Sweden," Professor Bengt von Hofsten of the food inspection authorities in Uppsala said. They are caught far away from the polluted site.

Waste from the Chiminova plant has poisoned the groundwater under the land in question on Jutland. Biologists at a laboratory that analyzed the amount of pollution sounded the alarm.

Danish environmental board director Jens Kampmann would have preferred to delay publication of this information until after the flat fish caught in the region had been analyzed.

The pollution is described as the most serious in Denmark to date. It will cost millions of kroner to remove the poison.

[Photo Caption]

Mercury emissions near Harboore have poisoned the groundwater and the sale of clams and shellfish in Denmark is being stopped.

9336

CS0: 5000/2103

## MEDITERRANEAN COUNTRIES MAKE ATHENS ENVIRONMENTAL CAPITAL

Athens BUSINESS &amp; FINANCE in English 4 Apr 81 pp 24, 25

[Text]

SIXTEEN of the eighteen Mediterranean countries and the EC agreed in Cannes last week on a broad three-year programme to "save their sea", costing approximately \$12 million for 1981-83.

The six-day ministerial-level conference selected Athens to be the headquarters of the small co-ordinating group which will direct the activities of the "Mediterranean Action Plan". The group is headed by Italy's Aldo Manos. Marinou Yeroulanos, a leading Greek government environmentalist, said that Athens "therefore becomes the environmental capital of the Mediterranean".

The largest single sum of money in the budget - about \$3 million - will be spent on the Mediterranean pollution-monitoring and research programme now being carried out by 83 marine laboratories in 16 countries, throughout the basin. "This is a vital programme" commented Louis Dominici, a high-ranking official of the French Ministry of the Environment. "For one thing, the findings of the labs tell us what the state of health of the sea is, whether it is getting better or worse, and how fast. Secondly, they will serve to control the implementation of the treaty on land-based sources of pollution, signed in Athens last May". Industrial waste, municipal sewage, and

agricultural run-off (fertilisers and pesticides) account for 85% of all Mediterranean pollution.

How long will it be before Mediterranean beaches and bathing waters are clean and safe for tourists and the inhabitants of the Mediterranean shores? "Well, most of them are reasonably clean and safe for swimming and sunbathing today", remarked Stepan Keckes, director of the 10-sea oceans sponsoring programme of the United Nations Environmental Programme (UNEP) which is sponsoring the Riviera meeting. "But obviously, there is a lot of room for improvement, especially in regard to "invisible" and insidious pollution from heavy metals and bacteria. It is an illusion to imagine that the Mediterranean will ever be pristine, but we can reserve the tide of pollution and guarantee the same safe, clean waters all around the sea. Naturally, this won't be done overnight. The skies of London were not made fog-free or the Thames safe for salmon in a month or a year. But I sincerely believe that in 10 to 15 years there will be a vast improvement, with things getting better gradually every year".

The government has placed at the disposal of the Secretariat the first floor of the National Research Foundation.



## ASPROPYRGOS RESIDENTS OPPOSE NEW GAS PLANT

Athens ELEVTEROS KOSMOS in Greek 7 Apr 81 p 9

[Text] As if the two steel mills, the "Khalyps" cement plant, the refinery, the "Viasfalt" and other small and large industries in Aspropyrgos, the 250 tanneries and the three future cisterns are not enough, now it has been "decided and arranged" to move the Piraeus gas plant there. But this is not going to happen, declared residents, the municipal authority and deputies on 6 April at a demonstration, press interview and discussion at the town hall.

This is why: The pollution in Aspropyrgos is at the highest levels of worldwide specifications. The dust in breathable and non-breathable size, carbon and sulfur dioxide, ozone and other toxic substances are seven times greater than the specifications of the World Health Organization.

## On the Blacklist

In yesterday's demonstration it was reported that the situation is now being complicated with the new regulative plan which foresees the creation of a high-annoyance industrial zone on 8,500 stremmas in Aspropyrgos. The three cisterns, said the speakers, a commercial center of approximately 3,000 stremmas with warehouse areas all around, restriction on expansion of the city plan and restriction on population development (growth from 16,000 to only 25,000 residents is provided, whereas in Magoula, it is provided for the 2,500 residents to reach 25,000) show that Aspropyrgos is written on the blacklist of cities "under destruction."

It was stressed that Ministerial Decision 17823/79 considers Skaramangas bay suitable only for fishing and...unsuitable for swimming, even though the current of the natural torrent of Agios Georgios, which from Aspropyrgos flows into this bay, carries filth and disease.

As chemist and municipal councilor Vaso Liakou said, the latest "gift" is the transfer of the gas plant from Piraeus to Aspropyrgos. Others said, in order to calm spirits, that according to the Watson study the gas plant will have as many emissions as a bus which makes the Omonia to Syndagma run. On these grounds, said representatives of the municipality at the demonstration, we say such specifications should be applied to the already existing plant and the millions of drachmas which will be needed for its transfer should be allocated for building schools and other works.



## The Sea A Cess-pool

Emphasis was also given to the fact that not only is Aspropyrgos' atmosphere being polluted, not only are the industries also usurping the sea and changing it into a cess-pool, but also they are creating expansion areas with debris-fillings.

It was asked that:

1. Embankings be stopped and the operation of industries for which World Health Organization specifications are in force be allowed.
2. Liquid waste not be thrown in Skaramangas bay.
3. The municipality participate equally in the inspection of industries for maintenance of specifications.

Finally, the absence of related legislation for environmental protection was stressed and the government's intentional tardiness in placing the phantom draft-law for a vote in the Chamber was stigmatized.

In the meantime, in a conference which took place on 6 April, presided over by Premier Rallis and with the participation of the ministers of finance and industry, Athens Mayor Beis and official agents, there was discussion of the issue of cancelling the DEFA [Athens Public Gas Corporation] plant on the Piraeus road and having gas produced by the state refinery plants.

## Naptha Procurement

Immediately after the conference, the premier ordered for the bidding to proceed for procurement of naptha-aerification equipment for production of gas which will be enriched with gas already produced at the refinery. This gas will be made available to DEFA at a price which will be designated by a committee which the two parties will form.

The government is granting 180 million drachmas from the budget to DEFA for immediate modernization of the distribution network and its expansion to the entire greater Athens area.

A related announcement says that, with this method, environmental pollution in all of Attiki is significantly decreased because the gas produced will replace the use of mazut by industries and central heating systems. (A report of the TEE [Technical Chamber of Greece] committee confirms this.)

Finally, it was stressed that special care will be taken to safeguard the personnel in view of re-establishment of the public corporation. Moreover, it is stressed that the compulsory installation of a gas network in new greater Athens area buildings, as well as throughout Attiki, was decided.

9247

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# ACID RAINS FROM CONTINENT DESTROY FORESTS, LAKES IN SOUTH

Oslø ARBEIDERBLADET in Norwegian 26 Feb 81 p 12

[Text] The most comprehensive research project in Norway to date has been completed. "The Effect of Acid Precipitation on Forests and Fish" (the SNSF [Research Project on Pollution from Europe of Norway's Forests and Fisheries] Project) has been underway for 9 years and yesterday the gloomy conclusions were made public:

Sulfur emissions in Europe have caused extensive pollution in Norway, especially in southern Norway. The widespread killing of fish is the result of acidified waterways. Practically all lakes in a 13,000 square kilometer area, primarily in Agder Province and Telemark, have no fish and stocks have decreased sharply in lakes within a 20,000 square kilometer area. For example, 80 percent of the lakes in Bygland municipality in Aust-Agder now have no fish in them.

In the United States acid rain is now seen as one of the two most serious environmental problems. At a press conference yesterday Environmental Minister Rolf Hansen said that this problem had become important in our modern world.

The SNSF project cost around 80 million kroner and according to the environmental minister it has produced new and important knowledge. The project has already spurred great international interest and inspired similar research projects in the United States and Canada, which along with Norway and Sweden are hardest hit by pollution from other countries. Twelve institutions and 80 to 100 persons have been involved in the project. The responsible parties are the Technical and Natural Science Research Council, the Agricultural Science Research Council, and the Environmental Protection Department.

Project leader Lars N. Overrein stated that large portions of Europe have been acidified over the past 20 years. In central Europe large forest regions are in danger of being seriously damaged by the acid rain, but so far in Norway no decrease in forest growth has been demonstrated.

Acid rain comes to Norway primarily from oil- and coal-fired power plants in Europe. Norway is one of the leading nations in limiting its own emissions. The harmful effects of "imported" acid rain was discovered too late for us to have any hopes of an early improvement, although extensive international cooperation is underway. The EEC Conventions, which were signed by 34 countries in 1979, obligate these countries to combat pollution that is transported over national boundaries. But limiting emissions will increase the cost of energy, which other countries causing emissions have not been willing to do.

According to project leader Overrein, a permanent improvement will occur only if the countries themselves find it profitable to reduce emissions, thereby reducing internal harmful effects.

The EEC Conventions provide affected countries with an opportunity to consult with the polluting countries. Norway will now take such an initiative with respect to the EC countries. The conventions also give countries such as Norway the right to initiate economic measures against the polluting countries.

Even though the SNSF project has now been completed, research into acid rain will continue. Some of the results will be further processed in the Environmental Oversight Program, which was begun last year. The State Pollution Control Board and the Directorate of Wildlife and Fresh Water Fish, along with the Environmental Protection Department, will closely follow the effects of acid rain in Norway. The Environmental Protection Department will provide the necessary funds to utilize the expertise gained over the course of these 9 years, Environmental Protection Minister Rolf Hansen said.

9336

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# NEW TYPE WASTE RECYCLING FACILITY BEGINS OPERATION

Oslo NORGES HANDELS OG SJOFARTSTIDENDE in Norwegian 25 Feb 81 p 11

[Article by Ulf Arvid Mejlaender]

[Text] "An important step for Thune-Eureka and for modern waste treatment."

This was what Knut Kielland Lund of Thune--Eureka A/S told NORGES HANDELS OG SJOFARTSTIDENDE regarding the opening of the Sandmoen Waste Treatment Plant, which will take place tomorrow. Almost 10 years of research and planning have been carried out. The future prospects are great in Norway and there is a good chance of exporting our know-how and equipment.

The Midtre Namdalen Avfallsselskap, which is a joint company among the area's municipalities is sponsoring the facility. This company will handle the day-to-day waste treatment in the municipalities. The treatment facility itself was designed and constructed by the Thune-Eureka A/S company in Lier, which is part of the Kvaerner group. Local companies have helped in the construction. According to Thune-Eureka the facility, which is a pilot project of the Environmental Department, will be the most advanced waste treatment plant operating in Norway today.

The aim of the waste treatment has been to produce a usable soil-enriching substance (compost). To achieve this, it is necessary to remove certain components of the waste, such as glass, plastic, iron, and other hard substances. For this reason, the waste is first sorted. A portion of these materials is processed into high-grade fuel. A testing facility for fuel has been built in conjunction with the composting facility, in order to investigate the fuel's characteristics in more detail. If the results are satisfactory, new possibilities will open up for the utilization of waste.

A facility of this type can also utilize sewage sludge that is added during the composting process. After around 4 months the soil-enriching agent is ready for use. With full utilization of the fuel fraction, the Sandmoen facility will be able to recycle around 85 percent of all incoming waste.

According to Thune-Eureka, the preliminary results from pilot operations are promising and there is already great interest in the Sandmoen plant, especially on the part of the Swedes.

"We are now able to say that we have come a long way in this area by international standards and the possibilities for export are good. In both Scandinavia and northern Europe in general, there is great interest in the Thune-Eureka waste treatment system," division chief Kielland Lund said.

In contrast to most of the other companies working with waste recycling in Norway, Thune-Eureka has gone in for systems and facilities of smaller proportions. The Sandmoen plant has a capacity of 10,500 tons of communal waste per year, based on one work shift. The pre-treatment section has a capacity of 17,000 tons.

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**FACTORY CLOSES AFTER WATER FOUND CONTAMINATED WITH CHROME**

Stockholm DAGENS NYHETER in Swedish 28 Feb 81 p 8

[Article by Bo Engzell]

[Text] Scania has got another big poison scandal. That has now become clear from analyses which were released last Tuesday and which show that a chromium-plating industrial enterprise in the old sugar refinery at Hokoping south of Malmo has been discharging or storing contaminated, dangerous waste water containing large amounts of chrome, which is very dangerous.

The police have also found large supplies of poisonous substances on the premises, including a whole bag of cyanide, which the industrial enterprise did not have permission to store.

The chromium-plating industrial enterprise, Plateline, has been closed by the police at the request of the prosecutor. Next Monday the police will start an extensive search of the premises, where they fear that large quantities of waste water containing chrome have been discharged, perhaps over several years.

**High Rate of Concentration**

Plateline is located in the rebuilt boiler plant of the old sugar mill which accommodates several other small industrial enterprises. Quite close to the main building are big salesrooms with furniture and mats. Many people may thus have got into contact with the dangerous waste water that has been discharged.

"The analyses of the waste water show concentrations of chromium even exceeding 0.5 gram per liter of water," says Nils Thore Holm of the nature conservancy board of the county administration, which intervened without hesitation when the environmental scandal was exposed.

That shows what can happen after the BT-Kemi scandal at Teckomatorp, which until now was the largest individual case of environmental offense in Sweden. Also at Teckomatorp it was, like at Hokoping, a question of a factory with premises in an old sugar mill that had been closed down.



Plateline had been given instructions by the county authorities how to purify the waste water with chlorine. The enterprise later on asked for permission to purify the waste water in a different manner and obtained permission to do so. It has now turned out that they did not at all follow the instructions regarding the purification. The waste water containing the dangerous chrome and also nickel and copper was not treated but was discharged in large quantities, among other places in the lower section of the enormous factory chimney and probably also in big smoke flues under the sugar mill.

The question is what has later on become of the waste water.

It is suspected that large quantities may have run into the area surrounding the factory, where it may pose a threat to the ground water for the neighboring residential area. The police, therefore, have arranged for an early and close examination of the soil as well in the area surrounding the factory. Part of the factory floor will also have to be broken up in order to examine the flues under it.

The factory owner has not been available for several days. It has turned out that a worker who worked without protective clothing has contracted wounds, among other places on his hands, caused by chrome. The wounds heal with great difficulty. He clearly did not know the dangerous nature of the chemicals with which he was working.

"In our investigation we shall have to call in various experts," says Superintendent Tore Nilsson of the Malmö police, which will be in charge of the entire affair.

The poisonous substances, such as the bag of cyanide, which is one of the most dangerous poisonous substances existing, were stored in a pump housing, rented by the owner of Plateline. The pump housing is located approximately 20 meters from the main building. According to the nature conservancy board of the county administration, the owner of Plateline did not have permission to store these dangerous poisonous substances in the industrial area.

The investigators will, moreover, establish whether other poisonous substances than chrome were used in the processing industry and subsequently discharged without any purification. If so, the damage to the environment may be even worse than suspected today.

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OFFICIAL REPORTS PESTICIDE USE IN AGRICULTURE INCREASES

Stockholm DAGENS NYHETER in Swedish 11 Mar 81 p 9

[Article by Thomas Michelsen]

[Text] Swedish farmers use increasing amounts of pesticides each year. As in the post World War II years, the use of chemicals in agriculture to fight diseases keeps increasing.

"We are faced with another increase in the area treated with pesticides," Olle Pettersson, a state technical adviser on agriculture, said last Tuesday during the big debate on pesticides held in connection with the Farmers' Week.

"We have become more knowledgeable as regards the magnitude of crop losses caused by different growth damaging factors. And we have, moreover, got new and more effective chemical means," Olle Pettersson said. It is these factors which control the short-term development in the pest control.

But, at the same time, one encounters, on the contrary, in general debates and in the investigations' guidelines a pronounced interest in a reduction of the use of chemicals for pest control in agriculture, Olle Pettersson said.

Pesticides Pay Off

In the debate among leading state technical advisers on agriculture, there was agreement that it pays today to spray more. Alternative methods, such as the mechanical working of the soil against weeds, are, in general, more expensive for the farmers.

Whether or not the development will continue toward an increased use of pesticides is entirely up to the society, Olle Pettersson said. If the society invests in further research on alternative methods and if restrictions are imposed on the use of pesticides in agriculture, the trend may change.

From an earlier debate on Tuesday it appeared, incidentally, that the amount of spraying could be reduced considerably if only the farmers used better spraying techniques or if they got better spraying equipment.

A total stop to all spraying would cost 600 million kronor a year to begin with and approximately 2 billion kronor a year in 10 years, according to a calculation by Hjorn Sundell of the Agricultural University. The figure of 2 billion kronor could be compared to the 52 billion kronor spent in total by the Swedish people on food per year.

#### New Approach

State adviser on agriculture Allan Svensson said that an entirely new approach to agriculture would be needed if one were to give up using weedkillers. In that case, one would be compelled to abandon the one-sided grain-growing technique in flat-lying areas and shift to a varied crop rotation. Often with cows. But can we take milk production which is twice as big? Allan Svensson asked.

State adviser on agriculture Kjell Andersson said that we are facing a pronounced increase in the use of fungicides in agriculture. New fungicides are being introduced which have a very wide area of application and which thus fight several diseases at the same time. We risk getting an insurance idea among the farmers, Andersson said.

Farmers spray for safety's sake.

The increased use of nitrogenous fertilizers has also caused increasing attacks of fungus diseases.

Farmers fertilize in order to get lush growth and much grain. That means a favorable microclimate to fungal diseases such as blight and the dark spots disease, Kjell Andersson said.

Per Lundin, cultivation manager at Weibull, said that there are quite good possibilities of developing types through cultivation which are resistant to fungus diseases. But this, on the other hand, is a long-term job.

Actually, there is some kind of race going on between those who develop chemical means to fight plant diseases and those who are engaged in the development through cultivation of new growth which does not need any spraying.

The chemical development is carried on by private enterprises, often by international concerns with enormous financial resources. A single chemical means of pest control may cost 50 to 100 million kronor to develop.

The development of resistant types, on the contrary, is carried on largely by means of public funds and modest resources compared with the development of chemical means of pest control.

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PESTICIDE BILL DELAYED, BAN ON SPRAYING CONTINUES

Stockholm DAGENS NYHETER in Swedish 12 Mar 81 p 32

[Article by Bo. G. Anderson]

[Text] Extending the temporary prohibition against the use of pesticides in forestry for another year may become a hot topic.

The reason is that Minister of Agriculture Anders Dahlgren (Conservative Party) is in great need of extra time for the new bill on pesticides. It, therefore, is uncertain whether the Riksdag will be able to complete its work on the bill before the spraying season starts in the summer.

"If we shall not be able to get the bill ready by the summer, the only alternative will be to prolong the temporary prohibition for another year. It is out of the question to decontrol spraying with pesticides in the summer," Under Secretary of the Ministry of Agriculture Olof Nilsson tells DAGENS NYHETER.

If the bill will not be ready, disputes will arise within the government seeing that the Conservative Party opposes an extension of the prohibition against the use of pesticides in forests.

The political secretary of the Conservative Party, Thomas Wiiburg, says:

"An extension is unnecessary. The situation regarding the use of pesticides in forestry was not too unsatisfactory before the temporary halt to the spraying. For that reason, we find that they should be able to allow spraying in accordance with the old rules for still another summer pending the passing of the bill."

"Practical Difficulties"

"I do not understand why the Ministry of Agriculture cannot make up its mind. In the leaf blight report which forms the basis for the bill, all the parties except for the Left Party Communists were in agreement. It, therefore, should be a simple matter for Dahlgren simply to follow the proposal contained in the report.

One of the reasons why the work in the Ministry of Agriculture has been delayed is, according to Under Secretary Olof Nilsson "a split preliminary debate in the Riksdag before referring the bill to the proper committee" as well as "considerable practical difficulties to the municipalities in adjusting to the new law in time."

The report on leaf blight control was presented in December of last year and was more or less the result of the election debate on the use of pesticides in forestry which developed on the eve of the 1979 election.

It was at that time that the Social Democratic party secretary Sten Andersson met with the environmentalists at Sergel Square and promised to put a halt to the use of pesticides if the Social Democrats won the election. The other parties, except for the Conservative Party, cooperated and promised all of them to work for a halt to the use of pesticides.

The report proposes a five-fold increase in the areas sprayed--from 30,000 hectares annually to approximately 150,000 hectares annually [1 hectare: about 2.5 acres]. At the same time, they want the municipalities to have the right of refusal for the areas in the immediate vicinity of densely populated areas. In the other major forest areas, it is the National Swedish Board of Forestry which decides which areas are to be sprayed.

#### 200 Million Kronor More Expensive

The leaf blight proposal is largely based on the report presented by the National Swedish Board of Forestry in the fall of 1979. The weightiest and completely overshadowing argument for keeping the pesticides is that the mechanical clearance of 150,000 hectares of forest would be 200 million kronor more expensive than spraying.

The leaf blight report, therefore, does not propose any reduction in the total amount of spraying--which Sten Andersson (Social Democrat) promised prior to the election--but proposes that spraying from ground as well as air be permitted also in the future. This has caused the environmental organizations to protest against the proposal.

One of the phenoxy acids to be affected if the temporary prohibition is extended to remain in force throughout the summer is 2,4-D.

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STUDY INCREASES CONCERN OVER HARMFUL EFFECTS OF DIESEL EXHAUST

Stockholm SVENSKA DAGBLADET in Swedish 5 Mar 81 p 6

[Text] A preliminary study strongly suspects a connection between diesel exhausts and heart and vascular diseases.

At the Department for Occupational Medicine at Linköping, they, therefore, want to start a major study on this. Previously, foreign researchers have reported that engineers exposed to diesel exhaust more often than others die from cancer. There is also a study which shows an increased risk of dying from lung cancer among truck drivers.

To follow up these studies in the Swedish work environment, Olav Axelson and Christer Edling, physicians, together with Carl-Göran Anjou and Hans Kling, graduate engineers, have studied the effects on 129 employees of a municipal bus company. The preliminary study is reported in the latest issue of the Swedish Medical Journal LAKARTIDNINGEN.

During the period 1951-78, 12 of the employees died of heart and vascular diseases. This ought not to have been more than 6-7. Those who died of these diseases worked in the bus depot and/or as bus drivers.

The number is small. To establish with certainty whether those who inhale carbon monoxide from diesel exhausts actually have greater risks of dying from those diseases, further studies will be needed. However, on the basis of the statistical methods of calculation, the excess mortality is still sufficiently high to justify suspicion, the researchers say.

Any excess cancer mortality among those who were exposed to diesel exhaust could not be concluded from this preliminary study.

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